

THE WEATHER ELEMENTS

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PRESSURE AND WINDS

Unlike the preceding month, October weather was without important variations from that usually experienced in the mid-autumn month. Frequent and heavy rains over the central valleys, which had been such a marked feature of the weather during September, continued into the first week of October, but at the end of that time precipitation became more infrequent and the remainder of the month was mainly comparatively dry in that region. A tropical storm of great severity, moving northward through western Cuba on the morning of the 20th, attended by important loss of life and great damage to property on the Isle of Pines and over western Cuba, including the vicinity of Habana, seriously threatened the section of southern Florida visited by the disastrous hurricane of September. Fortunately this storm changed its course slightly to the northeastward and southern Florida escaped serious loss although rather high winds prevailed at Miami and in nearby areas.

The month opened with moderate to heavy precipitation over a large area from the northern Rocky Mountains eastward to the upper Lakes and lower Ohio Valley, the rain area extending northward into the western Canadian Provinces. This was promptly followed by a low-pressure area that developed over the middle Plains on the 3d and moved during the following 24 hours to Lake Superior, attended by heavy rains in portions of the Great Plains and upper Mississippi Valley, continuing during the following few days over the Ohio Valley and to the eastward, while lighter falls occurred over nearly all other districts from the Mississippi River eastward. In amount of rainfall and area covered this was the most important storm of the month.

From the 7th to the end of the second decade no cyclone of importance passed over the country, though local rains occurred at intervals; but these were mainly light and covered comparatively small areas.

On the 20th a tropical storm approached southern Florida and heavy rains set in over that area, the 24-hour falls amounting to from 5 to nearly 10 inches at points near the coast from Key West to Miami.

About the 22d cyclonic conditions developed over the far Southwest and during the 23d to 25th moved northeastward to the Ohio Valley and New England as a storm of considerable importance, attended by precipitation over nearly all districts from the eastern Great Plains to the Atlantic coast, the falls being quite heavy in portions of the Ohio and lower Mississippi Valleys and the North Atlantic States. No important cyclones occurred from the 25th to the end of the month, though there were local showers at intervals over rather wide areas from the Mississippi Valley eastward. Over the far Western States there were few important storms, and precipitation was confined largely to the coast districts where it occurred rather frequently during the first half of the month.

The anticyclones of the month were usually well pronounced, but entered the United States mainly through the Pacific Coast States and hence were associated with only moderate temperatures.

Probably the most important anticyclone entered the far West on the morning of the 3d and moved slowly eastward, reaching the central valleys by the 6th and the Southeastern States by the 8th, where it remained more or less fixed until after the end of the first decade, or until reinforced by another that had followed a somewhat

similar course from the Middle Plateau and reached the eastern districts by the middle of the month.

Another anticyclone that dominated the weather for a considerable period over the more southern districts entered the middle Pacific coast districts on the 23d, held sway over the Plateau on the following day, and advanced successively into the southern Plains and Southeastern States where it remained with diminishing intensity until near the close of the month.

The average pressure was highest over an extensive area from the far Northwest southeastward to the East Gulf and South Atlantic States, with a rather marked depression from the upper Mississippi Valley eastward to New England and the St. Lawrence Valley.

Pressure averages were above normal over a small area in the Plateau States, but otherwise they were below and distinctly so from the Missouri Valley eastward to New England and generally over Canada so far as available observations disclose.

Compared with the preceding month average pressures were higher from the Rocky Mountains westward, and generally over the middle and southern Plains and west Gulf States; elsewhere they were lower, and decidedly so over the southern districts of Canada and from the upper Mississippi Valley to New England.

The pressure distribution was not sufficiently marked to produce a persistent influence on the wind circulation, so that no large areas had prevailing winds from a single direction, but they were mainly from southerly points in the west Gulf and middle Plains and in portions of the Ohio Valley and to the Northeast, while westerly to northerly winds were frequent in the upper Missouri Valley and thence easterly to the Great Lakes.

Local high winds were infrequent and important damage was confined mainly to small areas, but few lives being lost. The details of severe wind and other damaging storms appear at the end of this section.

TEMPERATURE

The daily temperature changes were small; only in a few instances did they amount to more than 20°, and these were chiefly confined to small areas. The most notable case of important changes was on the 25th when temperatures were 20° to 30° higher than the preceding day over much of the Rocky Mountain region, 20° or more lower in the east Gulf and South Atlantic States, and 20° to 30° or more warmer in northern New England.

Generally the weather was warmer than normal from the Mississippi River westward, also southward from the Ohio and Potomac Rivers. It was cooler than normal from the upper Mississippi Valley and Manitoba eastward, save for a few localities in the St. Lawrence Valley. Generally there were no extremely high or low temperatures and the month as a whole was in marked contrast with October of 1925, when the lowest temperatures ever experienced in October were reported from nearly all northern and central sections from the Rocky Mountains eastward, and the monthly means were likewise the lowest ever observed over much of the same area.

The continued coolness over the northeastern district added another to the already long list of months with temperature averages there materially below normal.

The important warm periods were the first few days over practically all districts from the Mississippi Valley eastward, beginning on the 1st or 2d in the western districts and continuing to the 3d or 4th over the Atlantic Coast States. Over much of the country from the Great Plains westward the warmest periods were on the 4th and 5th in the far Northwest, and from the 15th to 17th over most other sections.

The lowest temperatures were observed mainly from the 25th to 28th from the middle and lower Mississippi Valley eastward, while from the Great Plains westward they were experienced chiefly from the 29th to 31st. Temperatures of 32° or lower were observed in all the States, though considerable areas in the Gulf and South Atlantic States and the lower elevations of the Southwest and California were without freezing temperatures. The lowest observed was -10°, at a high elevation in Colorado.

Frosts, save those of late September in the more northern districts, were mainly delayed until well after the average date, and most crops not injured at that time matured without injury from cold.

PRECIPITATION

The distribution of rainfall was, in a measure, similar to that of September as to comparison with the normal, there being an excess over a large area from the southern Plains northeastward through the middle Mississippi and Ohio Valleys, and generally over the Great Lakes area and to the eastward, as was the case in September, though the excesses were usually much less than in that month. Also the Middle and East Gulf and South Atlantic States had less than normal and this was also the case in September.

In general it was a month with precipitation above normal over a large majority of the States, though the total fall was distinctly less than was received in September.

In a few instances, notably in the vicinity of Lake Erie, and over the eastern portions of Kansas and Oklahoma and in western Arkansas, it was the wettest or nearly the wettest October of record. On the other hand, it was among the driest in the middle portions of the Plateau.

Continued rains over many portions of the central valleys and to the eastward during the first week still further delayed farming operations and caused additional damage to crops not yet gathered, by flooding or otherwise.

SNOWFALL

No important or unusual falls of snow were reported, which is in sharp contrast with conditions existing in October, 1925, when over large areas the snowfall occurred earlier and to greater depths than ever before recorded in the mid-autumn month.

Depths up to 10 inches or slightly more occurred in the mountains of northern New York and somewhat less fell in the interior and northern portions of New England. In the upper Lake region and thence to eastern North Dakota the total depths ranged up to 5 inches, and in a few localities up to 10 inches. In the Rocky Mountains there was more or less snow, extreme depths at some of the higher levels ranging up to 10 inches and in a few instances to as much as 15 inches or slightly more.

There was little snow over the northern mountain districts or in the Plateau and Pacific Coast States, save in the high Sierra of central California where a few localities had total falls ranging up to 5 or 10 inches. Little snow remained on the ground at the end of the month save in the mountain districts.

RELATIVE HUMIDITY

The percentage of relative humidity was above normal to a considerable extent in the far Southwest and over most of the areas to the northeastward and eastward, save along the Atlantic and Gulf coast districts where there were mainly small deficiencies. Over the Missouri Valley and thence west to the Pacific relative humidity was generally less than normal.

SEVERE LOCAL HAIL AND WIND STORMS, OCTOBER, 1926

[The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A more complete statement will appear in the Annual Report of the Chief of Bureau]

Place	Date	Time	Width of path, yards ¹	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Humboldt, Iowa.....	1	1 a. m.				Probably a tornado.	Dwellings, garages, and plate-glass windows damaged to the extent of several thousand dollars.	Official, U. S. Weather Bureau.
Independence, Kans.....	1	3:30-4 p. m.	4 mi.		\$1,500	Hail.....	Damage chiefly to cotton crop and window glass. Path 4 miles long.	Do.
Sandusky County, Ohio.....	1	P. m.				Violent wind and rain.	Trees uprooted; buildings damaged; telephone and telegraph lines blown down; many orchards badly injured; car service interrupted.	Do.
Dawson County, Tex. (southwest part of).	2	7 p. m.	3 mi.			Straight winds....	Several windmills and weak buildings wrecked; cotton blown out. Path 15 miles long.	Do.
Cloverport, Ky.....	4					Wind.....	Character of damage not reported.	Do.
Lansing (near), Mich.....	4					Tornadic wind....	Damage to trees, buildings, and fences resulted.	Do.
Willet, N. Y.....	5					High wind.....	Windows, trees, and overhead wires considerably damaged.	Do.
Harpersfield Center, N. Y....	5	Midnight.				Tornadic wind....	Several homes damaged; highways obstructed by fallen trees.	Official, U. S. Weather Bureau; Star (Oneonta, N. Y.)
Kingsley and Hopbottom, Pa., and vicinity.	6					Cloudburst and wind.	Extensive damage to farms, roads, and buildings, principally by flooding.	Scranton Times (Pa.).
Wanamaker, Kans.....	12	A. m.				Heavy hail and rain.	Total damage small, as most crops had matured.	Official, U. S. Weather Bureau.
Key West, Fla.....	20-21				20,000	High wind and rain.	Considerable property damage reported.....	Do.
Chandler, Okla., and vicinity.	22	Noon.....	7 mi.		3,000	Moderate to heavy hail.	Some damage to property and minor crop injury over path 8 miles long.	Do.
Okmulgee County, Okla., (southern part of).	22	3-4 p. m.	6 mi.		7,000	Light to heavy hail.	Crops considerably damaged; other losses slight. Path 20 miles long.	Do.
Shiner, Tex.....	23	2:20 - 2:55 p. m.	5 mi.		15,000	Heavy hail.....	Windows, roofs, and crops seriously damaged; poultry killed or injured; stones weighed from 3 to 8 pounds.	Do.
Rosenberg, Richmond, Sugarland, and Missouri City, Tex.	23	3:30-4 p. m.			100,000	do.....	Cotton stripped, cattle severely injured, and windows broken.	Do.
Wortham, Tex.....	23					Hail and wind....	Windows and roofs damaged; several oil derricks wrecked, one burned by lightning.	Do.
Philadelphia, Pa.....	25					High wind and rain.	Considerable minor damage.....	Do.
New Jersey (northern and central parts of).	25					Severe winds and heavy rains.	Much damage to buildings, poles, trees, and signs at various points.	Do.
New York City, N. Y.....	25					High wind.....	A 74-mile wind damaged many windows and paralyzed harbor traffic.	Official, U. S. Weather Bureau; Star (Oneonta, N. Y.)
Irvington-on-Hudson, N. Y....	25			2		do.....	A steam freighter capsized, causing death of two persons.	Official, U. S. Weather Bureau.

¹ "Mi." signifies miles instead of yards.